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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANSSI RAMO, JANI NURMINEN, SAKARI HIMANEN,
and ARI HEIKKINEN

Appeal 2007-2298
Application 10/692,291
Technology Center 2600

Decided: March 18, 2008

Before JAMES D. THOMAS, MAHSHID D. SAADAT,
and MARC S. HOFF, *Administrative Patent Judges*.

THOMAS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal involves claims 1 through 24. We have jurisdiction under 35 U.S.C. §§ 6(b) and 134(a).

As best representative of the disclosed and claimed invention, independent claim 1 is reproduced below:

1. A method for improving coding efficiency in audio coding, wherein an audio signal is encoded for providing parameters indicative of

the audio signal, the parameters including pitch contour data containing a plurality of pitch values representative of an audio segment in time, said method comprising:

creating, based on the pitch contour data, a plurality of simplified pitch contour segment candidates, each candidate corresponding to a sub-segment of the audio signal, wherein each sub-segment has a start-point pitch value and an end-point pitch value and each candidate has a start segment point and an end segment point, and wherein the start segment points of at least some candidates are different from the start-point pitch values of the corresponding sub-segments and the end segment points of at least some candidates are different from the end-point pitch values of the corresponding sub-segments;

measuring deviation between each of the simplified pitch contour segment candidates and said pitch values in the corresponding sub-segment;

selecting, among said candidates, a plurality of consecutive segment candidates to represent the audio segment based on the measured deviations and one or more pre-selected criteria; and

coding the pitch contour data in the sub-segments of the audio signal corresponding to the selected segment candidates with characteristics of the selected segment candidates.

The following references are relied on by the Examiner:

Swaminathan	US 5,704,400	Dec. 30, 1997
Lumelsky	US 6,246,672 B1	Jun. 12, 2001
Gao	US 6,449,590 B1	Sep. 10, 2002

Lee, "A Very Low Bit Rate Speech Coder Based on a Recognition/Synthesis Paradigm," IEEE Transactions on Speech and Audio Processing, July 2001, pp. 482-491.

All claims on appeal stand rejected under 35 U.S.C. § 103. In a first stated rejection, the Examiner relies upon Lee in view of Gao as to claims 1

through 5, 7 through 12, 15, 17, and 20. To this combination of references the Examiner, in a second stated rejection, adds Swaminathan as to claim 6. Lastly, in a third stated rejection, the Examiner adds Lumelsky to the combination of Lee and Gao as to claims 13, 14, 16, 18, 19, and 21 through 24.

Rather than repeat the positions of the Appellants and the Examiner, reference is made to the Brief and Reply Brief for Appellants' positions, and to the Answer for the Examiner's positions.

OPINION

For the reasons set forth by the Examiner in the Answer, as amplified here, we sustain each of the three separately stated rejections of the claims on appeal. At the outset, we observe that the Examiner at pages 3 and 4 of the Answer has improperly incorporated by reference the statements of the rejections set forth in the Final Rejection. MPEP § 1207.02 requires the rejections to be fully repeated in the Answer. On the other hand, we also observe that pages 6 through 11 of the principal Brief on appeal repeat essentially the same rejections apparently set forth in the Final Rejection. The Examiner expands upon the combinability and analysis of Lee and Gao at pages 4 through 6 of the Answer. In view of these facts, and in an effort to expedite the decision in this appeal, we have not remanded this application to the Examiner to correct this informality.

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a

rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007).

The Supreme Court reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR,* 127 S. Ct. at 1739. The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 1740. The Court noted that "[c]ommon sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 1742.

The Federal Circuit recently concluded that it would have been obvious to combine (1) a device for actuating a phonograph to play back sounds associated with a letter in a word on a puzzle piece with (2) a processor-driven device capable of playing the sound associated with a first letter of a word in a book. *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*,

485 F.3d 1157, 1161 (Fed. Cir. 2007). In reaching that conclusion, the Federal Circuit recognized that "[a]n obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not." *Id.* at 1161 (citing *KSR*, 127 S. Ct. 1727, 1739 (2007)). The Federal Circuit relied in part on the fact that Leapfrog had presented no evidence that the inclusion of a reader in the combined device was "uniquely challenging or difficult for one of ordinary skill in the art" or "represented an unobvious step over the prior art." *Id.* (citing *KSR*, 127 S. Ct. at 1740-41).

In the absence of separate arguments with respect to claims subject to the same rejection, those claims stand or fall with the claim for which an argument was made. *See In re Young,* 927 F.2d 588, 590 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii)(2004).

Dovetailing with this precedent, we note further that the test for obviousness has been further characterized as not whether the features of a secondary reference may be bodily incorporated into the structure of a primary reference. It is also not that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 414, 425 (CCPA 1981); *In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991).

According to the principal Brief on appeal, Appellants' arguments with respect to independent claims 1, 11, 17, and 20 present no arguments as

to their dependent claims and argue a feature common to each of these independent claims. This feature focuses upon the language of the creating clause requiring the start segment points of "some" candidates are different from the start point pitch values of the corresponding sub-segments of the audio signal and the corresponding feature that the end segment points of "some" candidates are different from the end point pitch values of the corresponding sub-segments of the audio signal.

No arguments are presented to us as well distinguishing the second stated rejection of claim 6 over the arguments presented in the first stated rejection as to all the noted independent claims there. Lastly, as to the third stated rejection, which encompasses independent claims 16 and 24, patentability is predicated on the same arguments as with respect to representative independent claim 1 in the first stated rejection.

We find no error in the Examiner's application and choice of prior art in formulating the three rejections of all claims on appeal within 35 U.S.C. § 103. We agree with the Examiner's corresponding responsive arguments beginning at page 4 of the Answer through the end of the Answer and particularly the Examiner's apparent restatement of the combinability of Lee and Gao in the Response To Argument portion of the Answer which in turn directly addresses every argument presented by Appellants in the principal Brief on appeal beginning at page 11 of the principal Brief. As some of the above case law notes, the test for proper combinability within 35 U.S.C. § 103 is not a structural combinability approach, which is the focus of the arguments presented in the principal Brief on Appeal. The Examiner has

properly utilized the teaching value of the respective references in assessing their proper combinability within 35 U.S.C. § 103.

In this light, we agree with the Examiner's assessment of the teaching value of Gao as it applies to Lee as best expressed at the bottom of page 5 of the Answer. According to Appellants' assessment of Lee beginning at the bottom of page 13 of the principal Brief on appeal, both Appellants and the Examiner agree with the teaching value of this reference as it applies to the creating, measuring, selecting and coding features of representative independent claim 1 on appeal. To understand the Examiner's reliance upon the time warping concepts of Gao, as best set forth in the Summary of the Invention at column 2 in this reference, it is noted that a given speech signal has a previous pitch lag and a current pitch lag that lead to a pitch lag contour and the continuous warping concept of Gao which involves warping the speech signal from a first time region to a second time region.

Although we regard the Examiner's reliance upon the teachings at columns 42 and 43 of Gao as compelling, the showings in figures 8 through 10 and the discussion of them beginning at the bottom of column 41 through column 46 are much more instructive. Gao determines the best local delay dynamically such that as best shown in figure 10, the original speech waveform is warped from an original to a modified time region which teaches in other words the same claimed concept of the start segment points of at least "some" of the candidates being different from the corresponding start point pitch values of the corresponding sub-segment of the audio signal along with the corresponding features of the end segment point of at least "some" of the candidates being different from the ends point pitch values of

the corresponding sub-segments of the original audio signal as claimed. As the Examiner reasoned using his "benefit" analysis of utilizing Gao's time warping capability, the number of bits needed to code the original pitch lag contour is much much less than if the time warping concepts of Gao were not utilized. Note the first full paragraph at the top of column 42. Thus, coming from an artisan's perspective, the Examiner's view that the benefit of performing such a time warping modification of Gao in the system of Lee would have allowed for better linear approximation of a pitch contour by determining the optimal start and ending times with fewer bits than with an actual encoding operation.

Lastly, we address the remarks set forth in the Reply Brief. Here Appellants have not challenged any of the Examiner's observations in the responsive arguments portion of the Answer. Instead, Appellants improperly argue before us that Lee teaches away from the combination of Lee and Gao because the methods discussed in Lee do not require time-warping. We will not entertain such arguments since a teaching away argument has not been first presented to us and to the Examiner in the principal Brief on Appeal. On the other hand, Appellants have also presented no arguments in the Reply Brief that would have discouraged a person of ordinary skill from following the path set out in Gao, or would be led in a direction divergent from the path actually taken by Appellants as expressed in the claims.

In view of the foregoing, the decision of the Examiner rejecting all claims on appeal under 35 U.S.C. § 103 is affirmed. Appellants have not

shown any error in the Examiner's positions with respect to the three stated rejection of all claims on appeal.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. §1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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